IN THE CLAIMS

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-10 (Canceled).

Claim 11 (Currently Amended): A method for treating a metabolic disorder mediated by insulin resistance or hyperglycemia type II diabetes, comprising:

administering to a mammal in need of treatment for a metabolic disorder-mediated by insulin resistance or hyperglycemia an effective amount of at least one sulfonamide derivative compound according to formula I to treat type II diabetes

a geometrical isomer thereof, an optically active form as an enantiomer thereof, a diastereomer thereof, a racemate thereof, and a pharmaceutically acceptable salt thereof,

wherein Y is an 4-12-membered saturated cyclic or bicyclic alkyl containing at least one nitrogen atom, wherein one nitrogen atom in said ring is bonded to the sulfonyl group of formula I thus providing the sulfonamide;

 R^1 is selected from the group consisting of hydrogen, C_1 - C_6 -alkoxy, C_1 - C_6 -alkyl, C_2 - C_6 -alkenyl, C_2 - C_6 -alkynyl, amino, sulfanyl, sulfonyl, sulfonyl, sulfonyloxy, sulfonamide, acylamino,

aminocarbonyl, C₁-C₆ alkoxycarbonyl, aryl, heteroaryl, carboxy, cyano, halogen, hydroxy, nitro, and hydrazides;

R² is selected from the group consisting of hydrogen, COOR³, -CONR³R³', OH, a C₁-C₄ alkyl substituted with an OH or amino group, a hydrazido carbonyl group, a sulfate, a sulfonate, an amine and an ammonium salt:

wherein R^3 and R^3 are independently selected from the group consisting of H, C_1 - C_6 -alkyl, C_2 - C_6 -alkenyl, aryl-, heteroaryl, aryl- C_1 - C_6 -alkyl, and heteroaryl- C_1 - C_6 -alkyl.

Claims 12-13 (Cancelled).

Claim 14 (Previously Presented): The method as claimed in claim 11, wherein R^1 is selected from the group consisting of hydrogen, halogen, C_1 - C_6 alkyl and C_1 - C_6 alkoxy.

Claim 15 (Previously Presented): The method as claimed in claim 11, wherein Y is at least one cyclic amine selected from the group consisting of

$$(a) \qquad (b) \qquad (c) \qquad (c)$$

wherein, L^1 and L^2 are independently selected from the group consisting of C_1 - C_6 -alkyl, C_2 - C_6 -alkynyl, and C_4 - C_8 -cycloalkyl optionally containing 1-3 heteroatoms and optionally fused with aryl or heteroaryl; or L^1 and L^2 are independently selected from the group consisting of aryl, heteroaryl, aryl- C_1 - C_6 -alkyl, heteroaryl- C_1 - C_6 -alkyl, -C(O)- OR^3 , -C(O)- OR^3 , - $OR^$

wherein R^3 and R^3 ' are independently selected from the group consisting of H, C_1 - C_6 -alkyl, C_2 - C_6 -alkenyl, aryl, heteroaryl, aryl- C_1 - C_6 -alkyl, and heteroaryl- C_1 - C_6 -alkyl;

or L^1 and L^2 taken together form a 4-8-membered, saturated cyclic alkyl or heteroalkyl group; and

 $R^6 \ is \ selected \ from \ the \ group \ consisting \ of \ hydrogen, \ C_1-C_6-alkyl, \ C_1-C_6-alkoxy, OH, \\ halogen, \ nitro, \ cyano, \ sulfonyl, \ and \ oxo \ (=O); \ and$

n' is an integer from 0 to 4.

Claim 16 (Previously Presented): The method as claimed in claim 15, wherein n' is 1 or 2.

Claim 17 (Previously Presented): The method as claimed in claim 15, wherein R⁶ is H, L² is H, L¹ is –NR³'R³; where at least one of R³' and R³ is not hydrogen, but a substituent selected from the group consisting of straight or branched C₄-C₁₈-alkyl, aryl-C₁-C₁₈-alkyl, heteroaryl-C₂-C₁₈-alkyl, and C₁-C₁₄-alkyl substituted with a C₃-C₁₂-cycloalkyl or -bicyclo or – tricyloalkyl; and wherein said alkyl chain may contain 1-3 O or S atoms.

Claim 18 (Previously Presented): The method as claimed in claim 17, wherein L^1 is – NHR³; where R^3 is a straight or branched C_4 - C_{12} -alkyl, optionally substituted with a cyclohexyl group or a benzyl group.

Claim 19 (Previously Presented): The method as claimed in claim 18, wherein \mathbb{R}^3 is a straight or branched \mathbb{C}_6 - \mathbb{C}_{12} -alkyl.

Claim 20 (Previously Presented): The method as claimed in claim 15, wherein Y is a piperidine group

$$N$$
 L^1

L¹ is -NHR³; where R³ is a straight or branched C₄-C₁₂-alkyl, or a benzyl group.

Claim 21 (Previously Presented): The method as claimed in claim 20, wherein R^3 is C_{8} - C_{12} -alkyl.

Claim 22 (Currently Amended): The method as claimed in claim 11, wherein the sulfonamide derivative compound of formula I is at least one selected from the group consisting of

- 4-chloro-N-[5-(piperazine-1-sulfonyl)-thiophen-2-yl-methyl]-benzamide;
- 4-Chloro-N-{5-[4-(3-trifluoromethanesulfonyl-phenylamino)-piperidine-1-sulfonyl]-thiophen-2-ylmethyl}-benzamide;
- 4-chloro-N-({5-[(4-pyridin-2-ylpiperazin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

```
4-chloro-N-[(5-{[4-(4-fluorobenzoyl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
4-chloro-N-{[5-({4-[4-(trifluoromethyl)phenyl]piperazin-1-yl}sulfonyl)thien-2-
yl]methyl}benzamide;
4-chloro-N-({5-[(4-{2-nitrophenyl}piperazin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
4-chloro-N-({5-[(4-{4-nitrophenyl}piperazin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
4-chloro-N-[(5-{[4-(2-furoyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
4-chloro-N-[(5-{[4-(4-hydroxyphenyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
4-chloro-N-[(5-{[4-(2-oxo-2-pyrrolidin-1-ylethyl)piperazin-1-yl]sulfonyl}thien-2-
yl)methyl]benzamide;
4-chloro-N-[(5-{[4-(2-morpholin-4-yl-2-oxoethyl)piperazin-1-yl]sulfonyl}thien-2-
yl)methyl]benzamide;
4-chloro-N-[(5-{[4-(pyridin-4-ylmethyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
4-chloro-N-[(5-{[4-(2-thien-2-ylethyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
4-chloro-N-[(5-{[4-(3,5-dimethoxyphenyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
4-chloro-N-[(5-{[4-(cyclohexylmethyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
4-chloro-N-[(5-{[4-(2-methoxyphenyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
N-({5-[(4-benzylpiperazin-1-yl)sulfonyl]thien-2-yl}methyl)-4-chlorobenzamide;
4-chloro-N-[(5-{[4-(2-phenylethyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
4-chloro-N-[(5-{[4-(4-fluorobenzyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
4-chloro-N-[(5-{[4-(2-cyanophenyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
4-chloro-N-{[5-({4-[4-chloro-3-(trifluoromethyl)phenyl]piperazin-1-yl}sulfonyl)thien-2-
vllmethvl}benzamide;
```

- 4-chloro-N-[(5-{[4-(3-piperidin-1-ylpropyl)piperazin-1-yl]sulfonyl}thien-2-
- yl)methyl]benzamide;
- 4-chloro-N-({5-[(4-{4-chloro-2-nitrophenyl}piperazin-1-yl)sulfonyl]thien-2-
- yl}methyl)benzamide;
- 4-chloro-N-[(5-{[4-(6-methylpyridin-2-yl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-({5-[(4-hydroxy-4-phenylpiperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- N-({5-[(4-benzoylpiperidin-1-yl)sulfonyl]thien-2-yl}methyl)-4-chlorobenzamide;
- $4-chloro-N-[(5-\{[4-(2-oxo-2,3-dihydro-1H-benzimidazol-1-yl)piperidin-1-yl]sulfonyl\}thien-2-dihydro-1H-benzimidazol-1-yl)piperidin-1-yl]sulfonyl\}thien-2-dihydro-1H-benzimidazol-1-yl)piperidin-1-yl]sulfonyl\}thien-2-dihydro-1H-benzimidazol-1-yl)piperidin-1-yl]sulfonyl\}thien-2-dihydro-1H-benzimidazol-1-yl)piperidin-1-yl]sulfonyl\}thien-2-dihydro-1H-benzimidazol-1-yl)piperidin-1-yl]sulfonyl]$
- yl)methyl]benzamide;
- N-({5-[(4-benzylpiperidin-1-yl)sulfonyl]thien-2-yl}methyl)-4-chlorobenzamide;
- 4-chloro-N-({5-[(4-oxo-1-phenyl-1,3,8-triazaspiro[4.5]dec-8-yl)sulfonyl]thien-2-
- yl}methyl)benzamide;
- yl]methyl}benzamide;
- 4-chloro-N-{[5-({4-[hydroxy(diphenyl)methyl]piperidin-1-yl}sulfonyl)thien-2-
- yl]methyl}benzamide;
- 4-chloro-N-[(5-{[4-(3-cyanopyrazin-2-yl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- $\label{lem:condition} \mbox{4-chloro-N-(\{5-[(4-\{5-nitropyridin-2-yl\}piperazin-1-yl)sulfonyl]thien-2-yl\}methyl)} benzamide;$
- yl]methyl}benzamide;
- $4-chloro-N-\{[5-(\{4-[5-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl\}sulfonyl)thien-2-yl-(\{4-[5-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl\}sulfonyl)thien-2-yl-(\{4-[5-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl\}sulfonyl)thien-2-yl-(\{4-[5-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl\}sulfonyl)thien-2-yl-(\{4-[5-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl\}sulfonyl)thien-2-yl-(\{4-[5-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl-(\{4-[5-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl-(\{4-[5-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl-(\{4-[5-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl-(\{4-[5-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl-(\{4-[5-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl-(\{4-[5-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl-(\{4-[5-(trifluoromethyl)pyridin-2-yl-(\{4-[5-(t$
- yl]methyl}benzamide;

- 4-chloro-N-{[5-({4-[3-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-[(5-{[4-(2,4-difluorobenzoyl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- methyl 5-{4-[(5-{[(4-chlorobenzoyl)amino]methyl}thien-2-yl)sulfonyl]piperazin-1-yl}-7-
- (trifluoromethyl)thieno[3,2-b]pyridine-3-carboxylate;
- ethyl 2-{4-[(5-{[(4-chlorobenzoyl)amino]methyl}thien-2-yl)sulfonyl]piperazin-1-yl}-5-cyano-6-methylnicotinate;
- $\label{lem:constraint} $$4-{\rm o-bis(dimethylamino)pyridin-2-yl]piperazin-1-yl}sulfonyl)thien-2-yllmethyl}benzamide;$
- 4-chloro-N-{[5-({4-[6-methyl-2-(trifluoromethyl)quinolin-4-yl]piperazin-1-yl} sulfonyl)thien-2-yl]methyl}benzamide;
- tert-butyl 4-[(5-{[(4-chlorobenzoyl)amino]methyl}thien-2-yl)sulfonyl]piperazine-1-carboxylate;
- 5,8-dihydropyrido[2,3-d]pyrimidine-6-carboxylic acid;
- $7-\{4-[(5-\{[(4-chlorobenzoyl)amino]methyl\}thien-2-yl)sulfonyl]piperazin-1-yl\}-1-ethyl-6-fluoro-1-yl-1-yl-1-ethyl-6-fluoro-1-yl-1-yl-1-ethyl-6-fluoro-1-yl-1-yl-1-ethyl-6-fluoro-1-yl-1-yl-1-ethyl-6-fluoro-1-yl-1-yl-1-ethyl-6-fluoro-1-yl-1-yl-1-ethyl-6-fluoro-1-yl-1-yl-1-ethyl-6-fluoro-1-yl-1-yl-1-ethyl-6-fluoro-1-yl-1-ethyl-6-flu$
- 4-oxo-1,4-dihydro[1,8]naphthyridine-3-carboxylic acid;
- 7-{4-[(5-{[(4-chlorobenzoyl)amino]methyl}thien-2-yl)sulfonyl]piperazin-1-yl}-1-ethyl-6-fluoro-4-oxo-1,4-dihydroquinoline-3-carboxylic acid;
- 4-chloro-N-[(5-{[4-(2,3-dihydro-1,4-benzodioxin-2-ylcarbonyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-{[5-({4-[(2E)-3-phenylprop-2-enyl]piperazin-1-yl}sulfonyl)thien-2-
- yl]methyl}benzamide;
- 4-chloro-N-[(5-{[4-(3-phenylpropyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

- 4-chloro-N-[(5-{[4-(3,4,5-trimethoxyphenyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- N-[(5-{[4-(4-tert-butylbenzyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]-4-chlorobenzamide:
- 4-chloro-N-[(5-{[4-(4-fluorophenyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-[(5-{[4-(2-hydroxyphenyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-{[5-({4-[4-(trifluoromethyl)pyridin-2-yl]piperazin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-[(5-{[4-(5-cyanopyridin-2-yl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- tert-butyl 1-[(5-{[(4-chlorobenzoyl)amino]methyl}thien-2-yl)sulfonyl]piperidin-4-ylcarbamate;
- 4-chloro-N-({5-[(4-phenylpiperazin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- 4-chloro-N-{[5-(piperidin-1-ylsulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-[(5-{[4-(3,4-dichlorophenyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-{[5-({4-[3-(trifluoromethyl)phenyl]piperazin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- $\label{lem:condition} $$4-$chloro-N-{[5-({3-hydroxy-4-[3-(trifluoromethyl)phenyl]piperidin-1-yl}} sulfonyl) thien-2-yl] methyl} benzamide;$
- 4-chloro-N-[(5-{[4-(2-methylphenyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

```
N-[(5-{[(1R,4R)-5-benzyl-2,5-diazabicyclo[2.2.1]hept-2-yl]sulfonyl}thien-2-yl)methyl]-4-chlorobenzamide:
```

 $N-[(5-\{[4-(benzyloxy)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]-4-chlorobenzamide;\\$

4-chloro-N-[(5-{[4-(2-chlorodibenzo[b,f][1,4]oxazepin-11-yl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $N-(4-chlorophenyl)-2-(5-\{[4-(2-oxo-2,3-dihydro-1H-benzimidazol-1-yl)piperidin-1-yl]sulfonyl\}thicn-2-yl)acctamide;$

 $\hbox{$4$-chloro-N-($5-[(4-hydroxypiperidin-1-yl)sulfonyl]thien-2-yl} methyl) benzamide; \\$

 $N-[(5-\{[4-(4-acetylphenyl)piperazin-1-yl]sulfonyl\}thien-2-yl)methyl]-4-chlorobenzamide;$

4-chloro-N-[(5-{[4-(3,5-dichloropyridin-4-yl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

4-chloro-N-[(5-{[4-(3-methoxyphenyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $N-(\{5\hbox{-}[(4\hbox{-}benzyl\hbox{-} 4\hbox{-}hydroxypiperidin\hbox{-} 1\hbox{-}yl)sulfonyl]thien\hbox{-} 2\hbox{-}yl\} methyl)\hbox{-} 4\hbox{-}chlorobenzamide;}$

N-{[5-({4-[(2-tert-butyl-1H-indol-5-yl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-4-chlorobenzamide;

4-chloro-N-{[5-({4-[(phenylacetyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

4-chloro-N-[(5-{[4-(tetrahydrofuran-2-ylcarbonyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

4-chloro-N-[(5-{[4-(6-chloropyridin-2-yl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

- N-[(5-{[4-(2H-1,2,3-benzotriazol-2-yl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-4-chlorobenzamide;
- 4-chloro-N-[(5-{[4-(4-chlorobenzoyl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-({5-[(4-phenoxypiperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- $N-\{[5-(\{4-[benzyl(methyl)amino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-4-chlorobenzamide;$
- $\label{lem:hamiltonian} $$4-{\rm loro-N-\{[5-(4-[3-(2,4-dichlorophenyl)-1H-pyrazol-5-yl]piperidin-1-yl\}sulfonyl)}thien-2-yl]methyl}$ benzamide;$
- $\label{lem:condition} $$4-{\rm lono-N-[(5-{[4-(5-thien-2-yl-1H-pyrazol-3-yl)piperidin-1-yl]sulfonyl}$ thien-2-yl) methyl] benzamide;$
- 4-chloro-N-[(5-{[4-(2,3,4,5,6-pentamethylbenzoyl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-[(5-{[4-(phenylacetyl)-1,4-diazepan-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-{[5-((4-[5-(4-methoxyphenyl)-1H-pyrazol-3-yl]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- N-({5-[(4-anilinopiperidin-1-yl)sulfonyl]thien-2-yl}methyl)-4-chlorobenzamide;
- 4-chloro-N-[(5-{[4-(3-phenyl-1,2,4-thiadiazol-5-yl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- $\label{lem:condition} \mbox{4-chloro-N-(\{5-[(4-heptylpiperazin-1-yl)sulfonyl]thien-2-yl\}} methyl) benzamide;$
- $\label{lem:condition} \mbox{4-chloro-N-(\{5-[(4-octylpiperazin-1-yl)sulfonyl]thien-2-yl\}methyl)} benzamide;$
- $\label{eq:new_problem} N-[(5-\{[4-(1H-1,2,3-benzotriazol-1-yl]piperidin-1-yl]sulfonyl\} thien-2-yl) methyl]-4-chlorobenzamide;$

2-(5-{[4-(1H-1,2,3-benzotriazol-1-yl)piperidin-1-yl]sulfonyl}thien-2-yl)-N-(4-chlorophenyl)acetamide;

2-{1-[(5-{[(4-chlorobenzoyl)amino]methyl}thien-2-yl)sulfonyl]piperidin-4-yl}-2H-1,2,3-benzotriazole-5-carboxylic acid;

4-chloro-N-[(5-{[4-(5-chloro-1H-1,2,3-benzotriazol-1-yl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

methyl 1-{1-[(5-{[(4-chlorobenzoyl)amino]methyl}thien-2-yl)sulfonyl]piperidin-4-yl}-1H-1,2,3-benzotriazole-5-carboxylate;

methyl 1-{1-[(5-{[(4-chlorobenzoyl)amino]methyl}thien-2-yl)sulfonyl]piperidin-4-yl}-1*H*-1,2,3-benzotriazole-6-carboxylate;

methyl 2-{1-[(5-{[(4-chlorobenzoyl)amino]methyl}thien-2-yl)sulfonyl]piperidin-4-yl}-2H-1.2.3-benzotriazole-5-carboxylate:

4-chloro-N-[(5-{[4-(6-chloro-1H-1,2,3-benzotriazol-1-yl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

4-chloro-N-{[5-(4-[5-(trifluoromethyl)-1H-1,2,3-benzotriazol-1-yl]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

 $\label{eq:N-loss} N-[(5-\{[4-(7-aza-1H-benzimidazol-1-yl]piperidin-1-yl]sulfonyl\} thien-2-yl) methyl]-4-chlorobenzamide;$

 $1-\{1-(5-\{[(4-chlorobenzoyl)amino]methyl\}thien-2-yl)sulfonyl]piperidin-4-yl\}-1H-1,2,3-benzotriazole-5-carboxylic acid;$

1-{1-((5-{((4-chlorobenzoyl)amino]methyl}thien-2-yl)sulfonyl]piperidin-4-yl}-1H-1,2,3-benzotriazole-6-carboxylic acid;

N-[(5-{[4-(2-amino-9H-purin-9-yl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-4-chlorobenzamide:

- 4-chloro-N-[(5-{[4-(9H-purin-9-yl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- $\label{eq:n-loss} $N-[(5-\{[4-(6-amino-9H-purin-9-yl]piperidin-1-yl]sulfonyl\}$ thien-2-yl] methyl]-4-chlorobenzamide;$
- 4-chloro-N-({5-[(4-{6-nitro-1H-benzimidazol-1-yl}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- 4-chloro-N-({5-[(4-{5-nitro-1H-benzimidazol-1-yl}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- $\label{lem:condition} $$4-chloro-N-[(5-\{[4-(2H-1,2,3-triazol-2-yl)piperidin-1-yl]sulfonyl}$ thien-2-yl)methyl] benzamide;$
- $N-[(5-\{[4-(1H-benzimidazol-1-yl)piperidin-1-yl]sulfonyl\} thien-2-yl)methyl]-4-chlorobenzamide; \\$
- 4-chloro-N-{[5-({4-[3-propylanilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-{[5-({4-[3-(trifluoromethyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-{[5-({4-[3-(dimethylamino)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- methyl 3-({1-[(5-{[(4-chlorobenzoyl)amino]-methyl}thien-2-yl)sulfonyl]-piperidin-4-yl}amino)-benzoate;
- 4-chloro-N-{[5-({4-[3-(methylsulfanyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- $4-chloro-N-(\{5-[(4-\{3-nitroanilino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl) benzamide; \\$
- 4-chloro-N-[(5-{[4-(2-methoxyanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

- 3-({1-[(5-{[(4-chlorobenzoyl)amino]methyl}thien-2-yl)sulfonyl]piperidin-4-yl}amino)benzamide;
- 4-chloro-N-{[5-({4-[2-(trifluoromethyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-({5-[(4-{2-nitro-4-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- 4-chloro-N-[(5-{[4-(4-chloroanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-{[5-({4-[4-(trifluoromethyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-({5-[(4-{4-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- 4-chloro-N-({5-[(4-{2-nitroanilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- $N-\{[5-(\{4-[4-(aminocarbonyl)anilino]piperidin-1-yl\} sulfonyl) thien-2-yl] methyl\}-4-chlorobenzamide;$
- 4-chloro-N-{[5-({4-[4-(1,3-dithiolan-2-yl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- N-[(5-{[4-(3-chloroanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-nitrobenzamide;
- 4-chloro-N-[(5-{[4-(3-chloroanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-[(5-{[4-(3-methoxyanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-{[5-({4-[3-(methylsulfonyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- $N-(\{5-[(4-\{3-[amino(imino)methyl]anilino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)-4-chlorobenzamide;\\$

- 4-chloro-N-({5-[(4-{3-[(2-hydroxyethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thien-2yl}methyl)benzamide;
- N-[(5-{[4-(2-aminoanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-4-chlorobenzamide;
- $\label{lem:condition} \mbox{4-chloro-N-[(5-\{[4-(2-hydroxyanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]} benzamide;$
- 4-chloro-N-[(5-{[4-(4-hydroxyanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-({5-[(4-{3-[(trifluoromethyl)sulfanyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- 4-chloro-N-[(5-{[4-(3-toluidino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-({5-[(4-{[3-chloro-5-(trifluoromethyl)pyridin-2-yl]amino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- 4-chloro-N-{[5-({4-[3-(1,3-oxazol-5-yl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- N-[(5-{[4-(3-tert-butylanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-4-chlorobenzamide:
- 4-chloro-N-[(5-{[4-(2-propylanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-{[5-({4-[(2,2-dioxido-1,3-dihydro-2-benzothien-5-yl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-[(5-{[4-(2,3-dihydro-1H-inden-5-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-[(5-{[4-(4-propylanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

```
N-\{[5-(\{4-[(3-aminopyridin-2-yl)amino]piperidin-1-yl\}sulfonyl) thien-2-yl]methyl\}-4-chlorobenzamide;
```

N-[(5-{[4-([1,1'-biphenyl]-3-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-4-chlorobenzamide;

 $N-[(5-\{[4-(3-benzylanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]-4-chlorobenzamide;$

4-chloro-N-[(5-{[4-(pyrimidin-2-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

4-chloro-N-({5-[(4-{[4-(trifluoromethyl)pyrimidin-2-yl]amino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

4-chloro-N-[(5-{[4-(3-cyclohexyl-4-hydroxyanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $N-(\{5-[(4-\{3-[(butylamino)sulfonyl]anilino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)-4-chlorobenzamide;$

 $\label{lem:condition} \mbox{4-chloro-N-[(5-\{[4-(3-ethylanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]} benzamide;$

4-chloro-N-[(5-{[4-(5,6,7,8-tetrahydronaphthalen-1-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $N-\{[5-(\{4-[3-(aminosulfonyl)anilino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-4-chlorobenzamide;$

4-chloro-N-[(5-{[4-(quinolin-5-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

4-chloro-N-[(5-{[4-(quinolin-8-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

```
4-Chloro-N-[(5-{[4-(3-propylphenoxy)piperidin-1-vl]sulfonyl}thien-2-
yl)methyl]benzamide;
4-chloro-N-{[5-({4-[(2E)-3-phenylprop-2-enoyl]piperazin-1-yl}sulfonyl)thien-2-
yl]methyl}benzamide;
4-chloro-N-({5-[(4-{4-nitrobenzovl})piperazin-1-vl)sulfonvl]thien-2-vl}methvl)benzamide;
N-({5-[(4-benzoylpiperazin-1-yl)sulfonyl]thien-2-yl}methyl)-4-chlorobenzamide;
4-chloro-N-{[5-({4-[4-(trifluoromethyl)benzoyl]piperazin-1-yl}sulfonyl)thien-2-
vllmethyl}benzamide;
4-chloro-N-{[5-({4-[4-(dimethylamino)benzoyl]piperazin-1-yl}sulfonyl)thien-2-
yl]methyl}benzamide;
4-chloro-N-[(5-{[4-(2-fluorobenzoyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide:
4-chloro-N-[(5-{[4-(2,6-difluorobenzovl)piperazin-1-vl]sulfonvl}thien-2-
vl)methyl]benzamide;
4-chloro-N-[(5-{[4-(3-fluorobenzoyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
4-chloro-N-[(5-{[4-(2-naphthoyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
4-chloro-N-[(5-{[4-(1-naphthoyl)piperazin-1-vl]sulfonyl}thien-2-vl)methyl]benzamide:
4-chloro-N-({5-[(4-{2-nitrobenzoyl}piperazin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
4-chloro-N-[(5-{[4-(pyridin-3-vlcarbonyl)piperazin-1-vl]sulfonyl}thien-2-
vl)methyl]benzamide;
N-[(5-{[4-(2,1,3-benzoxadiazol-5-ylcarbonyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]-4-
```

chlorobenzamide;

4-chloro-N-[(5-{[4-(2,4-difluorobenzoyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide:

- 4-chloro-N-[(5-{[4-(2,4,6-trifluorobenzoyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-[(5-{[4-(2,6-dichlorobenzoyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-({5-[(4-heptanoylpiperazin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- 4-chloro-N-[(5-{[4-(quinolin-8-ylsulfonyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-nitro-N-({5-[(4-{3-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- $\label{eq:new_problem} N-[(5-\{[4-(1H-1,2,3-benzotriazol-1-yl]piperidin-1-yl]sulfonyl\} thien-2-yl) methyl]-3-nitrobenzamide:$
- 4-nitro-N-({5-[(4-{3-[(trifluoromethyl)sulfonyl]anilino}piperidin-l-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- $N-[(5-\{[4-(2,4-difluor obenzoyl)piperidin-1-yl]sulfonyl\} thien-2-yl)methyl]-4-nitrobenzamide;$
- $N-[(5-\{[4-(1H-1,2,3-benzotriazol-1-yl]piperidin-1-yl]sulfonyl\} thien-2-yl)methyl]-4-nitrobenzamide:$
- N-[(5-{[4-(1H-1,2,3-benzotriazol-1-yl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-nitrobenzamide;
- 4-nitro-N-({5-[(4-{3-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- $N-[(5-\{[4-(2,4-difluor obenzoyl)piperidin-1-yl]sulfonyl\} thien-2-yl) methyl]-4-nitrobenzamide; \\$

- N-[(5-{[4-(1H-1,2,3-benzotriazol-1-yl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-4-nitrobenzamide:
- 3-nitro-N-[(5-{[4-(3-methoxyanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 3-nitro-N-{[5-({4-[3-(trifluoromethyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- $N-\{[5-(\{4-[3-(dimethylamino)anilino]pipcridin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-nitrobenzamide;$
- $3-nitro-N-\{[5-(\{4-[3-(methylsulfonyl)anilino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}benzamide;$
- 3-nitro-N-{[5-({4-[3-(methylsulfanyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- N-{[5-({4-[3-(aminosulfonyl)anilino]piperidin-1-yl}sulfonyl)thicn-2-yl]methyl}-3-nitrobenzamide;
- $methyl\ 3-\{[1-(\{5-[(\{3-nitrobenzoyl\}amino)methyl]-thien-2-yl\}sulfonyl)-piperidin-4-yl]amino\}benzoate;$
- $N-\{[5-(\{4-[3-(aminocarbonyl)anilino]piperidin-1-yl\}sulfonyl)\\thien-2-yl]methyl\}-3-nitrobenzamide;$
- $3-nitro-N-(\{5-[(4-\{3-nitroanilino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl) benzamide;\\$
- $3-nitro-N-[(5-\{[4-(2-methoxyanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;\\$
- $\label{lem:continuity} 3-nitro-N-\{[5-(\{4-[2-(trifluoromethyl)anilino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}benzamide;$
- 3-nitro-N-({5-[(4-{2-nitroanilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- $N-[(5-\{[4-(4-chloroanilino)piperidin-1-yl]sulfonyl\}thicn-2-yl)methyl]-3-nitrobenzamide;$

```
3-nitro-N-{[5-({4-[4-(trifluoromethyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
```

3-nitro-N-({5-[(4-{4-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

 $N-\{[5-(\{4-[4-(aminocarbonyl)anilino]piperidin-1-yl\}sulfonyl)\\ thien-2-yl]methyl\}-3-nitrobenzamide:$

N-[(5-{[4-(3-propylanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-nitrobenzamide;

 $N-[(5-\{[4-(3-chloroanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]-4-nitrobenzamide;$

 $4-nitro-N-[(5-\{[4-(3-methoxyanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;\\$

4-nitro-N-{[5-({4-[3-(trifluoromethyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

 $N-\{[5-(4-[3-(dimethylamino)anilino]piperidin-1-yl\} sulfonyl) thien-2-yl] methyl\}-4-nitrobenzamide;$

 $4-nitro-N-[(5-\{[4-(3-propylanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;\\$

4-nitro-N-{[5-({4-[3-(methylsulfonyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

4-nitro-N-{[5-({4-[3-(methylsulfanyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

N-{[5-({4-[3-(aminosulfonyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-4-nitrobenzamide:

3-{[1-({5-[({4-nitrobenzoyl}amino)methyl]thien-2-yl}sulfonyl)piperidin-4-yl]amino}benzamide;

3-{[1-({5-[({4-nitrobenzoyl}amino)methyl]thien-2-yl}sulfonyl)piperidin-4-yllamino}benzamide:

4-nitro-N-({5-[(4-{3-nitroanilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

 $4-nitro-N-\lceil (5-\lceil [4-(2-methoxyanilino)piperidin-1-yl]sulfonyl\} thien-2-yl)methyl] benzamide;$

4-nitro-N-({5-[(4-{2-nitroanilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

N-[(5-{[4-(4-chloroanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-4-nitrobenzamide;

4-nitro-N-({5-[(4-{4-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

N-{[5-({4-[4-(aminocarbonyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-4nitrobenzamide;

 $N-\{[5-(\{4-\{4-(1,3-dithiolan-2-yl\}anilino]piperidin-1-yl\}sulfonyl\}thien-2-yl]methyl\}-4-nitrobenzamide;$

N-({5-[(4-{3-[amino(imino)methyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)-3-nitrobenzamide:

N-({5-[(4-{3-[(2-hydroxyethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)-3-nitrobenzamide:

N-({5-[(4-anilinopiperidin-1-yl)sulfonyl]thien-2-yl}methyl)-3-nitrobenzamide;

 $N-(\{5-[(4-\{3-[(2-hydroxyethyl)sulfonyl]anilino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)-4-nitrobenzamide;$

N-({5-[(4-anilinopiperidin-1-yl)sulfonyl]thien-2-yl}methyl)-4-nitrobenzamide;

N-({5-[(4-{3-[amino(imino)methyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)-4-nitrobenzamide;

 $\label{lem:condition} 3-nitro-N-(\{5-[(4-\{3-[(trifluoromethyl)sulfanyl]anilino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)benzamide;$

 $\label{lem:condition} $$4-nitro-N-(\{5-[(4-\{3-[(trifluoromethyl)sulfanyl]anilino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)benzamide;$

3-nitro-N-[(5-{[4-({3-nitropyridin-2-yl}amino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $N-\{[5-(\{4-[(2,2-dioxido-1,3-dihydro-2-benzothien-5-yl)amino]piperidin-1-yl\} sulfonyl) thien-2-yl] methyl\}-3-nitrobenzamide;$

N-[(5-{[4-(2,3-dihydro-1H-inden-5-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-nitrobenzamide;

 $3-nitro-N-[(5-\{[4-(2-propylanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;\\$

 $3-nitro-N-[(5-\{[4-(4-propylanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;\\$

 $N-[(5-\{[4-(3-tert-butylanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]-3-nitrobenzamide;\\$

 $\label{lem:condition} 3-nitro-N-\{[5-(\{4-[3-(1,3-oxazol-5-yl]anilino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\} benzamide;$

3-nitro-N-[(5-{[4-(2-phenylethyl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $\label{lem:n-def} $$N-({5-[(4-{[3-chloro-5-(trifluoromethyl)pyridin-2-yl]amino}}\ piperidin-1-yl)sulfonyl]thien-2-yl)methyl)-3-nitrobenzamide;$

 $\label{eq:new_problem} $$N-[(5-[4-([1,l'-biphenyl]-3-ylamino)piperidin-1-yl]sulfonyl}$ thien-2-yl)methyl]-3-nitrobenzamide;$

N-[(5-{[4-(3-benzylanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-nitrobenzamide;

3-nitro-N-{[5-({4-[3-(morpholin-4-ylsulfonyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

3-nitro-N-[(5-{[4-(3-propylphenoxy)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

4-nitro-N-[(5-{[4-(pyrimidin-2-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

N-{[5-({4-[(3-aminopyridin-2-yl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-4nitrobenzamide:

4-nitro-N-[(5-{[4-({3-nitropyridin-2-yl}amino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

N-[(5-{[4-(2,3-dihydro-1H-inden-5-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-4-nitrobenzamide;

4-nitro-N-[(5-{[4-(2-propylanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $4-nitro-N-[(5-\{[4-(4-propylanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;\\$

 $N-[(5-\{[4-(3-tert-butylanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]-4-nitrobenzamide;\\$

4-nitro-N-[[5-([4-[3-(1,3-oxazol-5-yl]anilino]piperidin-1-yl]sulfonyl)thien-2-yl]methyl}benzamide;

 $\label{lem:condition} \mbox{4-nitro-N-[(5-\{[4-(2-phenylethyl)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]} benzamide;$

N-({5-[(4-{[3-chloro-5-(trifluoromethyl)pyridin-2-yl]amino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)-4-nitrobenzamide;

N-[(5-{[4-([1,1'-biphenyl]-3-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-4-nitrobenzamide;

 $N-[(5-\{[4-(3-benzylanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]-4-nitrobenzamide;\\$

4-nitro-N-{[5-({4-[3-(morpholin-4-ylsulfonyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

N-[(5-{[4-(2-aminoanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-nitrobenzamide;

3-nitro-N-[(5-{[4-(pyrimidin-2-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $N-\{[5-(\{4-[(3-aminopyridin-2-yl)amino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-nitrobenzamide;$

 $N-(\{5-[(4-\{2-nitro-4-[(trifluoromethyl)sulfonyl]anilino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)-3-methoxybenzamide;$

3-nitro-N-[(5-{[4-(3-phenylpropyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $3-nitro-N-(\{5-[(4-\{[4-(trifluoromethyl)pyrimidin-2-yl]amino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)benzamide;$

 $N-[(5-\{[4-(3-cyclohexyl-4-hydroxyanilino)piperidin-1-yl]sulfonyl\} thien-2-yl) methyl]-3-nitrobenzamide;$

 $N-(\{5-[(4-\{3-[(butylamino)sulfonyl]anilino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)-3-nitrobenzamide;$

 $N-[(5-\{[4-(3-ethylanilino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]-3-nitrobenzamide;$

3-nitro-N-[(5-{[4-(5,6,7,8-tetrahydronaphthalen-1-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

N-[(5-{[4-(2,4-difluorobenzoyl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-nitrobenzamide;

N-[(5-{[4-(2,4-difluorobenzoyl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-methoxybenzamide;

2-Hydroxy-N-({5-[(4-{3-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

N-[(5-{[4-(1H-1,2,3-benzotriazol-1-yl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-methoxybenzamide;

 $N-[(5-\{[4-(1H-1,2,3-benzotriazol-1-yl)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]-2-hydroxybenzamide:$

N-{[5-({4-[4-(1,3-dithiolan-2-yl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-3-nitrobenzamide;

3-methoxy-N-[(5-{[4-(3-methoxyanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $\label{lem:continuous} 3-methoxy-N-\{[5-(\{4-[3-(trifluoromethyl)anilino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}benzamide;$

 $N-\{[5-(44-[3-(dimethylamino)anilino]piperidin-1-yl\} sulfonyl) thien-2-yl] methyl\}-3-methoxybenzamide;$

3-methoxy-N-[[5-([4-[3-(methylsulfonyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

3-methoxy-N-[[5-([4-[3-(methylsulfanyl)anilino]piperidin-1-yl]sulfonyl)thien-2-yl]methyl}benzamide;

N-{[5-({4-[3-(aminosulfonyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-3-methoxybenzamide;

methyl 3-({1-[(5-{[(3-methoxybenzoyl)amino]-methyl}thien-2-yl)sulfonyl]-piperidin-4-yl}amino)-benzoate:

N-{[5-({4-[3-(aminocarbonyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-3methoxybenzamide;

3-methoxy-N-[(5-{[4-(2-methoxyanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

N-({5-[(4-{3-nitroanilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)-3-methoxybenzamide;

3-methoxy-N-{[5-({4-[2-(trifluoromethyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

N-({5-[(4-{2-nitroanilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)-3-methoxybenzamide;

 $N-\{[5-(\{4-[4-(aminocarbonyl)anilino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide;$

 $N-\{[5-(\{4-[4-(1,3-dithiolan-2-yl)anilino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide;$

N-[(5-{[4-(3-chloroanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-methoxybenzamide;

N-[(5-{[4-(4-chloroanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-methoxybenzamide;

 $\label{lem:condition} 3-methoxy-N-(\{5-[(4-\{4-[(trifluoromethyl)sulfonyl]anilino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl) benzamide;$

 $N-(\{5-[(4-\{3-[amino(imino)methyl]anilino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)-3-methoxybenzamide;$

N-({5-[(4-{3-[(2-hydroxyethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)-3-methoxybenzamide;

3-methoxy-N-({5-[(4-{3-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

N-({5-[(4-anilinopiperidin-1-yl)sulfonyl]thien-2-yl}methyl)-3-methoxybenzamide;

3-methoxy-N-({5-[(4-{3-[(trifluoromethyl)sulfanyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

 $\label{eq:n-loss} $N-[(5-\{[4-(4-hydroxyanilino)piperidin-1-yl]sulfonyl\} thien-2-yl)methyl]-3-methoxybenzamide;$

3-nitro-N-({5-[(4-{3-[(trifluoromethyl)sulfanyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

 $N-[(5-\{[4-(2-hydroxyanilino)piperidin-1-yl]sulfonyl\} thien-2-yl)methyl]-3-methoxybenzamide; \\$

3-methoxy-N-[(5-{[4-(pyrimidin-2-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $\label{lem:n-lemma-lem$

N-[(5-{[4-({3-nitropyridin-2-yl}amino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-methoxybenzamide;

 $\label{eq:n-loss} $N-\{[5-(\{4-[(2,2-dioxido-1,3-dihydro-2-benzothien-5-yl\}amino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide;$

N-[(5-{[4-(2,3-dihydro-1H-inden-5-ylamino)piperidin-1-yl]sulfonyl} thien-2-yl)methyl]-3-methoxybenzamide:

3-methoxy-N-[(5-{[4-(2-propylanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

```
3-methoxy-N-[(5-{[4-(4-propylanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl|benzamide;
```

 $N-[(5-\{[4-(3-tert-butylanilino)piperidin-1-yl]sulfonyl\} thien-2-yl) methyl]-3-methoxybenzamide; \\$

N-({5-[(4-{[3-chloro-5-(trifluoromethyl)pyridin-2-yl]amino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)-3-methoxybenzamide;

3-methoxy-N-{[5-({4-[3-(1,3-oxazol-5-yl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

N-[(5-{[4-([1,1'-biphenyl]-3-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-methoxybenzamide;

 $\label{lem:continuous} 3-methoxy-N-[(5-\{[4-(3-propylphenoxy)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;$

3-methoxy-N-{[5-({4-[3-(morpholin-4-ylsulfonyl)anilino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

 $3-methoxy-N-[(5-\{[4-(2-phenylethyl)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;\\$

N-[(5-{[4-(3-benzylanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-methoxybenzamide;

3-methoxy-N-[(5-{[4-(3-phenylpropyl)piperazin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

3-methoxy-N-({5-[(4-{[4-(trifluoromethyl)pyrimidin-2-yl]amino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

N-[(5-{[4-(3-cyclohexyl-4-hydroxyanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-methoxybenzamide:

 $N-(\{5-[(4-\{3-[(butylamino)sulfonyl]anilino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)-3-methoxybenzamide;$

N-[(5-{[4-(3-ethylanilino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-methoxybenzamide;

3-methoxy-N-[(5-{[4-(5,6,7,8-tetrahydronaphthalen-1-ylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $\label{eq:n-itro-l} N-[(5-\{[4-(1H-1,2,3-benzotriazol-1-yl]piperidin-1-yl]sulfonyl\} thien-2-yl) methyl]-5-nitro-1H-pyrazole-3-carboxamide;$

 $\label{eq:n-loss} N-[(5-\{[4-(1H-1,2,3-benzotriazol-1-yl)piperidin-1-yl]sulfonyl\} thien-2-yl)methyl]-2-oxo-1,2-dihydropyridine-3-carboxamide;$

 $\label{eq:n-loss} N-[(5-\{[4-(1H-1,2,3-benzotriazol-1-yl]piperidin-1-yl]sulfonyl\} thien-2-yl) methyl]-2-thioxo-1,2-dihydropyridine-3-carboxamide;$

N-[(5-{[4-(1H-1,2,3-benzotriazol-1-yl)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3,4-dihydroxybenzamide;

 $N-[(5-\{[4-(1H-1,2,3-benzotriazol-1-yl]piperidin-1-yl]sulfonyl\}$ thien-2-yl)methyl]pyridine-2-carboxamide;

N-[(5-{[4-(hexyloxy)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-methoxybenzamide;

N-({5-[(4-heptanoylpiperidin-1-yl)sulfonyl]thien-2-yl}methyl)-3-methoxybenzamide;

4-chloro-N-[(5-{[4-(3-propylanilino)piperidin-1-yl]sulfonyl}-2-furyl)methyl]benzamide;

4-chloro-N-[(5-{[4-(3-chloroanilino)piperidin-1-yl]sulfonyl}-2-furyl)methyl]benzamide;

4-chloro-N-[(5-{[4-(3-methoxyanilino)piperidin-1-yl]sulfonyl}-2-furyl)methyl]benzamide;

4-chloro-N-{[5-({4-[3-(trifluoromethyl)anilino]piperidin-1-yl}sulfonyl)-2-furyl]methyl}benzamide;

- 4-chloro-N-{[5-({4-[3-(dimethylamino)anilino]piperidin-1-yl}sulfonyl)-2-furyl]methyl}benzamide;
- 4-chloro-N-{[5-({4-[3-(methylsulfonyl)anilino]piperidin-1-yl}sulfonyl)-2-furyl]methyl}benzamide;
- 4-chloro-N-{[5-({4-[3-(methylsulfanyl)anilino]piperidin-1-yl}sulfonyl)-2-furyl]methyl}benzamide;
- $N-\{[5-(\{4-[3-(aminosulfonyl)anilino]piperidin-1-yl\}sulfonyl)-2-furyl]methyl\}-4-chlorobenzamide;$
- $methyl\ 3-(\{1-[(5-\{[(4-chlorobenzoyl)amino]methyl\}-2-furyl)sulfonyl]piperidin-4-yl\}amino)benzoate;$
- 3-({1-[(5-{[(4-chlorobenzoyl)amino]methyl}-2-furyl)sulfonyl]piperidin-4-yl}amino)benzamide;
- 4-chloro-N-({5-[(4-{3-nitroanilino}piperidin-1-yl)sulfonyl]-2-furyl}methyl)benzamide;
- 4-chloro-N-[(5-{[4-(2-methoxyanilino)piperidin-1-yl]sulfonyl}-2-furyl)methyl]benzamide;
- 4-chloro-N-{[5-({4-[2-(trifluoromethyl)anilino]piperidin-1-yl}sulfonyl)-2-furvilmethyl}benzamide:
- 4-chloro-N-({5-[(4-{2-nitroanilino}piperidin-1-yl)sulfonyl]-2-furyl}methyl)benzamide;
- 4-chloro-N-[(5-{[4-(4-chloroanilino)piperidin-1-yl]sulfonyl}-2-furyl)methyl]benzamide;
- $\label{lem:condition} $$4-(trifluoromethyl)$ an ilino] piperidin-1-yl sulfonyl)-2-furyl] methyl $$ benzamide;$
- 4-chloro-N-({5-[(4-{4-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]-2-furyl}methyl)benzamide;
- $N-\{[5-(\{4-[4-(aminocarbonyl)anilino]piperidin-1-yl\}sulfonyl)-2-furyl]methyl\}-4-chlorobenzamide:$

- 4-chloro-N-{[5-({4-[4-(1,3-dithiolan-2-yl)anilino]piperidin-1-yl}sulfonyl)-2-furyl]methyl}benzamide;
- $N-(\{5-[(4-\{3-[amino(imino)methyl]anilino\}piperidin-1-yl)sulfonyl]-2-furyl\}methyl)-4-chlorobenzamide;\\$
- 4-chloro-N-({5-[(4-{3-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]-2-furyl}methyl)benzamide:
- N-({5-[(4-anilinopiperidin-1-yl)sulfonyl]-2-furyl}methyl)-4-chlorobenzamide;
- 4-chloro-N-({5-[(3-{3-[(trifluoromethyl)sulfonyl]anilino}pyrrolidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- 4-chloro-N-({5-[(4-{3-[(trifluoromethyl)sulfonyl]anilino}azepan-1-yl)sulfonyl]thien-2-yl}methyl)benzamide:
- 5-{[(3-methoxybenzoyl)amino]methyl}-2-[(4-{3-[(trifluoromethyl)sulfonyl]-anilino}piperidin-1-yl)sulfonyl]thiophene-3-carboxylic acid;
- 5-{[(3-methoxybenzoyl)amino]methyl}-2-{[4-(octylamino)piperidin-1-yl]sulfonyl}thiophene-3-carboxylic acid;
- N-(2-hydroxyethyl)-5-{[(3-methoxybenzoyl)amino]methyl}-2-[(4-{3-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thiophene-3-carboxamide;
- N-({4-(hydrazinocarbonyl)-5-[(4-{3-[(trifluoromethyl)sulfonyl]anilino}-piperidin-1-yl)sulfonyl]thien-2-yl}methyl)-3-methoxybenzamide;
- 5-{[(3-methoxybenzoyl)amino]methyl}-2-[(4-{3-[(trifluoromethyl)sulfonyl]-anilino}piperidin-1yl)sulfonyl]thiophene-3-carboxamide;

- N-[2-(dimethylamino)ethyl]-5-{[(3-methoxybenzoyl)amino]methyl}-2-[(4-{3-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thiophene-3-carboxamide;
- N-({4-(hydroxymethyl)-5-[(4-{3-[(trifluoromethyl)sulfonyl]anilino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)-3-methoxybenzamide;
- 4-chloro-N-[(5-{[4-(hexylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 3-Methoxy-N-{[5-({4-[(4-trifluoromethylbenzyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-[(5-{[4-(heptylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-[(5-{[4-(pentylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-[(5-{[4-(butylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-[(5-{[4-(dodecylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-{[5-({4-[(2-cyclohexylethyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-{[5-({4-[(cyclohexylmethyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-({5-[(4-{[(1R)-1-cyclohexylethyl]amino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;
- N-{[5-({4-[(1R,2R,4S)-bicyclo[2.2.1]hept-2-ylamino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-4-chlorobenzamide;
- 4-chloro-N-{[5-({4-[(2-propoxyethyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

 $N-\{[5-(\{4-[(1-adamantylmethyl)amino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-4-chlorobenzamide:$

4-chloro-N-{[5-({4-[(2-pyridin-2-ylethyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

4-chloro-N-{[5-({4-[(2-piperidin-1-ylethyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

4-chloro-N-{[5-({4-[(2-ethylhexyl)amino]piperidin-1-yl}sulfonyl)thicn-2-yl]methyl}benzamide;

4-chloro-N-({5-[(4-{[3-(1H-imidazol-1-yl)propyl]amino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

4-chloro-N-[(5-{[4-(octylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

N-[(5-{[4-(heptylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-methoxybenzamide;

3-methoxy-N-[(5-{[4-(octylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

3-methoxy-N-[(5-{[4-(pentylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $N-[(5-\{[4-(butylamino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]-3-methoxybenzamide;\\$

 $N-[(5-\{[4-(dodecylamino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]-3-methoxybenzamide;\\$

 $N-\{[5-(4-[(2-cyclohexylethyl)amino]piperidin-1-yl\} \\ sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide;$

N-({5-[(4-{[(1R)-1-cyclohexylethyl]amino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)-3-methoxybenzamide;

N-{[5-({4-[(1R,2R,4S)-bicyclo[2.2.1]hept-2-ylamino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-3-methoxybenzamide;

3-methoxy-N-{[5-({4-[(2-propoxyethyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

 $N-\{[5-(\{4-[(1-adamantylmethyl)amino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide:$

 $N-\{[5-(\{4-[(3,3-diethoxypropyl)amino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide;$

3-methoxy-N-{[5-({4-[(3-morpholin-4-ylpropyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

3-methoxy-N-{[5-({4-[(2-piperidin-1-ylethyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

N-{[5-({4-[(2-cthylhexyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-3-methoxybenzamide;

 $N-(\{5-[(4-\{[3-(1H-imidazol-1-yl)propyl]amino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)-3-methoxybenzamide;$

 $N-[(5-\{[4-(hexylamino)piperidin-1-yl]sulfonyl\}thicn-2-yl)methyl]-3-methoxybenzamide;\\$

 $N-[(5-\{[4-(heptylamino)azepan-1-yl]sulfonyl\}thien-2-yl)methyl]-3-methoxybenzamide;\\$

 $3-methoxy-N-[(5-\{[4-(octylamino)azepan-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;\\$

 $3-methoxy-N-[(5-\{[4-(pentylamino)azepan-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;\\$

 $N-[(5-\{[4-(butylamino)azepan-1-yl]sulfonyl\}thien-2-yl)methyl]-3-methoxybenzamide;\\$

 $N-[(5-\{[4-(dodecylamino)azepan-1-yl]sulfonyl\}thien-2-yl)methyl]-3-methoxybenzamide;\\$

N-{[5-({4-[(2-cyclohexylethyl)amino]azepan-1-yl}sulfonyl)thien-2-yl]methyl}-3-methoxybenzamide;

- N-({5-[(4-{[(1R)-1-cyclohexylethyl]amino}azepan-1-yl)sulfonyl]thien-2-yl}methyl)-3-methoxybenzamide;
- N-{[5-({4-[(1R,2R,4S)-bicyclo[2.2.1]hept-2-ylamino]azepan-1-yl}sulfonyl)thien-2-yl]methyl}-3-methoxybenzamide:
- 3-methoxy-N-{[5-({4-[(2-propoxyethyl)amino]azepan-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- N-{[5-({4-[(cyclohexylmethyl)amino]azepan-1-yl}sulfonyl)thien-2-yl]methyl}-3-methoxybenzamide;
- $N-\{[5-(\{4-[(1-adamantylmethyl)amino]azepan-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide;$
- 3-methoxy-N-{[5-({4-[(3-morpholin-4-ylpropyl)amino]azepan-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 3-methoxy-N-[[5-({4-[(2-pyridin-2-ylethyl)amino]azepan-1-yl}sulfonyl)thien-2-yllmethyl}benzamide;
- 3-methoxy-N-{[5-({4-[(2-piperidin-1-ylethyl)amino]azepan-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- $N-\{[5-(\{4-[(2-ethylhexyl)amino]azepan-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide;\\$
- $N-(\{5-[(4-\{[3-(1H-imidazol-1-yl)propyl]amino\}azepan-1-yl)sulfonyl]thien-2-yl\}methyl)-3-methoxybenzamide;$
- $\label{lem:condition} \mbox{4-chloro-N-[(5-\{[4-(heptylamino)azepan-1-yl]sulfonyl\}thien-2-yl)methyl]} benzamide;$
- 4-chloro-N-[(5-{[4-(octylamino)azepan-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- 4-chloro-N-[(5-{[4-(pentylamino)azepan-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- $N-[(5-\{[4-(butylamino)azepan-1-yl]sulfonyl\}thien-2-yl)methyl]-4-chlorobenzamide;\\$

```
4-chloro-N-[(5-{[4-(dodecylamino)azepan-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
```

4-chloro-N-{[5-({4-[(2-cyclohexylethyl)amino]azepan-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

 $N-\{[5-(\{4-[(1R,2R,4S)-bicyclo[2.2.1]hept-2-ylamino]azepan-1-yl\}sulfonyl) thien-2-yl]methyl\}-4-chlorobenzamide;$

4-chloro-N-{[5-({4-[(2-propoxyethyl)amino]azepan-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

4-chloro-N-[(5-{[4-(hexylamino)azepan-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $N-[(5-\{[4-(hexylamino)azepan-1-yl]sulfonyl\}thien-2-yl)methyl]-3-methoxybenzamide;\\$

 $3-methoxy-N-[(5-\{[4-(\{2-[3-(trifluoromethyl)phenyl]ethyl\}amino)piperidin-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;$

 $3-methoxy-N-(\{5-[(4-\{[2-(4-methylphenyl)ethyl]amino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)benzamide;$

 $\label{lem:condition} 3-methoxy-N-\{[5-(\{4-[(1-naphthylmethyl)amino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}benzamide;$

3-methoxy-N-{[5-({4-[(2-phenylpropyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

 $N-(\{5-[(4-\{[2-(4-hydroxyphenyl]ethyl]amino\}piperidin-1-yl)sulfonyl]thien-2-yl\}methyl)-3-methoxybenzamide;$

3-methoxy-N-{[5-({4-[(3-phenylpropyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

 $N-\{[5-(\{4-[(2,3-dihydroxypropyl)amino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide;$

N-{[5-({4-[(2-hydroxyethyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-3-methoxybenzamide;

3-methoxy-N-[(5-{[4-(nonylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

3-methoxy-N-[(5-{[4-(decylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $3-methoxy-N-[(5-\{[4-(ethylamino)piperidin-1-yl]sulfonyl\}thicn-2-yl)methyl]benzamide;\\$

 $N-\{[5-(\{4-[(2-[1,1'-biphenyl]-4-ylethyl)amino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide;$

 $N-\{[5-(\{4-[([1,1'-biphenyl]-3-ylmethyl)amino]piperidin-1-yl\}sulfonyl) thien-2-yl]methyl\}-3-methoxybenzamide;$

 $\label{lem:condition} 3-methoxy-N-\{[5-([4-[(quinolin-4-ylmethyl)amino]piperidin-1-yl\}sulfonyl)thicn-2-yl]methyl\}benzamide;$

 $\label{lem:n-lemma-lem$

4-chloro-N-[[5-([4-[(2-{[(trifluoromethyl)sulfonyl]amino}ethyl)amino]-1-piperidinyl}sulfonyl)-2-thienyl]methyl}benzamide;

4-chloro-N-[(5-{[4-(propylamino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]benzamide;

4-chloro-N-[(5-{[4-({4-[(trifluoromethyl)sulfonyl]benzyl}amino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]benzamide;

4-chloro-N-{[5-({4-[(3,4-dihydroxybenzyl)amino]-1-piperidinyl}sulfonyl)-2-thienyl]methyl}benzamide;

methyl [{1-[(5-{[(4-chlorobenzoyl)amino]methyl}-2-thienyl)sulfonyl]-4-piperidinyl}(hexyl)amino]acetate;

tert-butyl [{1-[(5-{[(4-chlorobenzoyl)amino]methyl}-2-thienyl)sulfonyl]-4-piperidinyl}(hexyl)amino]acetate;

[{1-[(5-{[(4-chlorobenzoyl)amino]methyl}-2-thienyl)sulfonyl]-4-piperidinyl}(hexyl)amino]acetic acid;

 $N-[(5-\{[3-(heptylamino)pyrrolidin-1-yl]sulfonyl\}thien-2-yl)methyl]-3-methoxybenzamide;\\$

 $3-methoxy-N-[(5-\{[3-(octylamino)pyrrolidin-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;\\$

 $3-methoxy-N-[(5-\{[3-(pentylamino)pyrrolidin-1-yl]sulfonyl\}thien-2-yl)methyl]benzamide;\\$

 $N-[(5-\{[3-(butylamino)pyrrolidin-1-yl]sulfonyl\}thien-2-yl)methyl]-3-methoxybenzamide;\\$

 $N-[(5-\{[3-(dodecylamino)pyrrolidin-1-yl]sulfonyl\}thien-2-yl)methyl]-3-methoxybenzamide;\\$

 $N-\{[5-(\{3-[(2-cyclohexylethyl)amino]pyrrolidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide;$

 $\label{lem:n-l-yl} N-(\{5-[(3-\{[(1R)-1-cyclohexylethyl]amino\}pyrrolidin-1-yl)sulfonyl]thien-2-yl\} methyl)-3-methoxybenzamide;$

 $\label{lem:n-lemma-lem$

 $N-\{[5-(\{3-[(cyclohexylmethyl)amino]pyrrolidin-1-yl\}sulfonyl)\\ thien-2-yl]methyl\}-3-methoxybenzamide;$

 $N-\{[5-(\{3-[(1-adamantylmethyl)amino]pyrrolidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide:$

3-methoxy-N-{[5-({3-[(3-morpholin-4-ylpropyl)amino]pyrrolidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

3-methoxy-N-{[5-({3-[(2-pyridin-2-ylethyl)amino]pyrrolidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

3-methoxy-N-{[5-({3-[(2-piperidin-1-ylethyl)amino]pyrrolidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

 $N-\{[5-(\{3-[(2-ethylhexyl)amino]pyrrolidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide;$

 $N-[(5-\{[3-(hexylamino)pyrrolidin-1-yl]sulfonyl\}thien-2-yl)methyl]-3-methoxybenzamide;\\$

4-chloro-N-[(5-{[3-(heptylamino)pyrrolidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

4-chloro-N-[(5-{[3-(pentylamino)pyrrolidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;

N-[(5-{[3-(butylamino)pyrrolidin-1-yl]sulfonyl}thien-2-yl)methyl]-4-chlorobenzamide;

4-chloro-N-{[5-({3-[(2-cyclohexylethyl)amino]pyrrolidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

 $\label{lem:n-limit} $$N-\{[5-(\{3-[(1R,2R,4S)-bicyclo[2.2.1]hept-2-ylamino]pyrrolidin-1-yl\}sulfonyl)thien-2-yl]methyl}-4-chlorobenzamide;$

4-chloro-N-({5-[(3-{[(1-hydroxycyclohexyl)methyl]amino}pyrrolidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

N-{[5-({3-[(1-adamantylmethyl)amino]pyrrolidin-1-yl}sulfonyl)thien-2-yl]methyl}-4-chlorobenzamide:

- 4-chloro-N-{[5-({3-[(2-pyridin-2-ylethyl)amino]pyrrolidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-{[5-({3-[(2-ethylhexyl)amino]pyrrolidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- 4-chloro-N-[(5-{[3-(octylamino)pyrrolidin-1-yl]sulfonyl}thien-2-yl)methyl]benzamide;
- methyl (2S)-1-[(5-{[(4-chlorobenzoyl)amino]methyl}-2-thienyl)sulfonyl]-4-(hexylamino)-2-pyrrolidinecarboxylate;
- $\label{lem:lemma$
- N-{[5-({4-[2-(butylamino)ethyl]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-3-methoxybenzamide;
- $\label{lem:nonethyl} $$N-{[5-({4-[(4-butylanilino)methyl]-1-piperidinyl}sulfonyl)-2-thienyl]methyl}-3-methoxybenzamide;$
- 4-chloro-N-{[5-({4-[(cyclohexylmethyl)(hexyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;
- $N-\{[5-(\{4-[benzyl(hexyl)amino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-4-chlorobenzamide;\\$

4-chloro-N-{[5-({4-[hexyl(pyridin-4-ylmethyl)amino]piperidin-1-yl}sulfonyl)thion-2-yl]methyl}benzamide;

4-chloro-N-{[5-({4-[hexyl(pyridin-2-ylmethyl)amino]piperidin-1-yl}sulfonyl)thicn-2-yl]methyl}benzamide;

N-{[5-({4-[butyl(hexyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-4-chlorobenzamide;

4-chloro-N-{[5-({4-[hexyl(3-phenylpropyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

4-chloro-N-{[5-({4-[hexyl(2-phenylethyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

 $N-\{[5-(\{4-[[(5-bromo-2-furyl)methyl](hexyl)amino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-4-chlorobenzamide;$

3-methoxy-N-({5-[(4-{methyl|4-(trifluoromethyl)benzyl]amino}-1-piperidinyl)sulfonyl]-2-thienyl}methyl)benzamide;

4-chloro-N-{[5-({4-[(3-chlorobenzyl)amino]piperidin-1-yl}sulfonyl)thicn-2-yl]methyl}benzamide;

3-methoxy-N-({5-[(4-{[4-(trifluoromethyl)benzyl]amino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

3-methoxy-N-{[5-({4-[(3-methylbenzyl)amino]piperidin-1-yl}sulfonyl)thien-2yl]methyl}benzamide;

3-methoxy-N-{[5-({4-[(4-propylbenzyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

3-methoxy-N-({5-[(4-{[3-(trifluoromethyl)benzyl]amino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

3-methoxy-N-({5-[(4-{[4-(trifluoromethoxy)benzyl]amino}piperidin-1-yl)sulfonyl]thien-2-yl}methyl)benzamide;

 $N-(\{5-[(4-\{[4-(difluoromethoxy)benzyl]amino\}piperidin-1-yl)sulfonyl]thien-2-yl\} methyl)-3-methoxybenzamide;\\$

3-methoxy-N-{[5-({4-[(2,3,4,5,6-pentamethylbenzyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

3-methoxy-N-{[5-({4-[(4-propoxybenzyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

N-{[5-({4-[(4-butoxybenzyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-3-methoxybenzamide:

3-methoxy-N-{[5-({4-[(4-methoxybenzyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

3-methoxy-N-{[5-({4-[(pyridin-4-ylmethyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

3-methoxy-N-{[5-({4-[(pyridin-2-ylmethyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

3-methoxy-N-[[5-({4-[(pyridin-3-ylmethyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

N-{[5-({4-[(4-tert-butylbenzyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}-3methoxybenzamide;

 $N-\{[5-(\{4-[(3-ethoxybenzyl)amino]piperidin-1-yl\}sulfonyl)thien-2-yl]methyl\}-3-methoxybenzamide;$

3-methoxy-N-{[5-({4-[(4-phenoxybenzyl)amino]piperidin-1-yl}sulfonyl)thien-2-yl]methyl}benzamide;

3-methoxy-N-[(5-{[4-({4-[(trifluoromethyl)sulfanyl]benzyl}amino)piperidin-1yl]sulfonyl}thien-2-yl)methyl]benzamide;

 $\label{lem:lemma$

 $N-(\{5-[(4-\{[3,5-bis(trifluoromethyl)benzyl]amino\}-1-piperidinyl)sulfonyl]-2-thienyl\} methyl)-3-methoxybenzamide;\\$

 $N-(\{5-[(4-\{[2,5-bis(trifluoromethyl)benzyl]amino\}-1-piperidinyl)sulfonyl]-2-thienyl\} methyl)-3-methoxybenzamide;$

N-({5-[(4-{[4-(ethylsulfanyl)benzyl]amino}-1-piperidinyl)sulfonyl]-2-thienyl}methyl)-3-methoxybenzamide;

3-methoxy-N-[(5-{[4-({3-[(trifluoromethyl)sulfanyl]benzyl}amino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]benzamide;

 $N-(\{5-[(4-\{[(2,2-difluoro-1,3-benzodioxol-5-yl)methyl]amino\}-1-piperidinyl)sulfonyl]-2-thienyl\}methyl)-3-methoxybenzamide;$

 $\label{lem:n-lemma-lem$

N-({5-[(4-{[4-(benzyloxy)benzyl]amino}-1-piperidinyl)sulfonyl]-2-thienyl}methyl)-3-methoxybenzamide;

N-{[5-({4-[(mesitylmethyl)amino]-1-piperidinyl}sulfonyl)-2-thienyl]methyl}-3-methoxybenzamide;

 $N-\{[5-(\{4-[(4-chlorobenzyl)amino]-1-piperidinyl\}sulfonyl)-2-thienyl]methyl\}-3-methoxybenzamide:$

N-{[5-({4-[(4-ethylbenzyl)amino]-1-piperidinyl}sulfonyl)-2-thienyl]methyl}-3methoxybenzamide: 3-methoxy-N-{[5-({4-[(4-pentylbenzyl)amino]-1-piperidinyl}sulfonyl)-2-thienyl]methyl}benzamide;

 $3-methoxy-N-[(5-\{[4-(\{1-[4-(trifluoromethyl)phenyl]ethyl\}amino)-1-piperidinyl]sulfonyl\}-2-thienyl)methyl]benzamide;$

3-methoxy-N-{[5-({4-[(4-methylbenzyl)amino]-1-piperidinyl}} sulfonyl)-2-thienyl]methyl}benzamide;

 $N-\{[5-(\{4-[(4-butylbenzyl)amino]-1-piperidinyl\}sulfonyl)-2-thicnyl]methyl\}-3-methoxybenzamide;$

 $N-\{[5-(\{4-[(4-isopropylbenzyl)amino]-1-piperidinyl\}sulfonyl)-2-thienyl]methyl\}-3-methoxybenzamide;$

N-{[5-({4-[(4-isobutylbenzyl)amino]-1-piperidinyl}sulfonyl)-2-thienyl]methyl}-3-methoxybenzamide;

 $N-(\{5-[(4-\{[(1-hydroxy-11ambda-5-pyridin-4-yl)methyl]amino\}-1-piperidinyl) sulfonyl]-2-thienyl\} methyl)-3-methoxybenzamide;$

 $N-\{[5-(\{4-[(2,3-dihydro-1,4-benzodioxin-6-ylmethyl)amino]-1-piperidinyl\} sulfonyl)-2-thienyl]methyl\}-3-methoxybenzamide;$

 $\label{eq:n-section} N-\{[5-(\{4-[(2,3-dihydro-1-benzofuran-5-ylmethyl)amino]-1-piperidinyl\} sulfonyl)-2-thienyl]methyl\}-3-methoxybenzamide;$

4-chloro-N-({5-[(4-{[4-(trifluoromethoxy)benzyl]amino}-1-piperidinyl)sulfonyl]-2-thienyl}methyl)benzamide;

4-chloro-N-({5-[(4-{[4-(difluoromethoxy)benzyl]amino}-1-piperidinyl)sulfonyl]-2-thienyl}methyl)benzamide;

 $N-\{[5-(\{4-[(4-butoxybenzyl)amino]-1-piperidinyl\}sulfonyl)-2-thienyl]methyl\}-4-chlorobenzamide:$

4-chloro-N-{[5-({4-[(4-quinolinylmethyl)amino]-1-piperidinyl}sulfonyl)-2-thienyl]methyl}benzamide;

 $N-\{[5-(\{4-[(4-tert-butylbenzyl)amino]-1-piperidinyl\}sulfonyl)-2-thienyl]methyl\}-4-chlorobenzamide;$

 $\label{lem:condition} $$4-{\rm chloro-N-\{[5-(\{4-[(4-phenoxybenzyl]amino]-1-piperidinyl\}sulfonyl)-2-thienyl]methyl}$ benzamide;$

4-chloro-N-[(5-{[4-({4-[(trifluoromethyl)sulfanyl]benzyl}amino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]benzamide;

3-methoxy-N-[(5-{[4-({[6-(trifluoromethyl)-3-pyridinyl]methyl}amino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]benzamide;

N-[(5-{[4-(benzylamino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]-3-methoxybenzamide;

3-methoxy-N-[(5-{[4-(4-(trifluoromethyl)phenyl]propyl}amino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]benzamide;

3-methoxy-N-[(5-{[4-({1-methyl-1-[4-(trifluoromethyl)phenyl]ethyl}amino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]benzamide;

- 4-chloro-N-[(5-{[4-({1-[4-(trifluoromethyl)phenyl]ethyl}amino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]benzamide;
- 4-chloro-N-[(5-{[4-({1-methyl-1-[4-(trifluoromethyl)phenyl]ethyl}amino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]benzamide;
- 4-chloro-N-[(5-{[2-({[4-(trifluoromethyl)benzyl]amino}methyl)-1-pyrrolidinyl]sulfonyl}-2-thienyl)methyl]benzamide;
- 4-chloro-N-[(5-{[(3R)-3-({[4-(trifluoromethyl)benzyl]amino}methyl)pyrrolidinyl]sulfonyl}-2-thienyl)methyl]benzamide;
- 4-chloro-N-{[5-({3-[(hexylamino)methyl]-1-piperidinyl}sulfonyl)-2-thienyl]methyl}benzamide;
- $\label{lem:condition} $$4-$chloro-N-{[5-({(3R)-3-[(hexylamino)methyl]pyrrolidinyl}sulfonyl)-2-thienyl]methyl} benzamide;$
- 2-oxo-N-({5-[(4-{[4-(trifluoromethyl)benzyl]amino}-1-piperidinyl)sulfonyl]-2-thienyl}methyl)-1,2-dihydro-3-pyridinecarboxamide;
- $\label{eq:new_loss} $$N-[(5-\{[4-(hexylamino)-1-piperidinyl]sulfonyl\}-2-thienyl)$ methyl]-2-oxo-1,2-dihydro-3-pyridinecarboxamide;$
- N-[(5-{[4-(hexylamino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]-2-hydroxybenzamide;
- 2-hydroxy-N-({5-[(4-{[4-(trifluoromethyl)benzyl]amino}-1-piperidinyl)sulfonyl]-2-thienyl}methyl)benzamide;

N-[(5-{[4-(hexylamino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]-2-thioxo-1,2-dihydro-3-pyridinecarboxamide;

2-thioxo-N-({5-[(4-{[4-(trifluoromethyl)benzyl]amino}-1-piperidinyl)sulfonyl]-2-thienyl}methyl)-1,2-dihydro-3-pyridinecarboxamide;

N-[(5-{[4-(butylamino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]-2-oxo-1,2-dihydro-3-pyridinecarboxamide;

N-({5-[(4-{ethyl[4-(irifluoromethyl)benzyl]amino}-1-piperidinyl)sulfonyl]-2-thienyl}methyl)-3-methoxybenzamide;

4-chloro-N-[(5-{[4-({imino[4-(trifluoromethyl)phenyl]methyl}amino)-1-piperidinyl]sulfonyl}-2-thienyl)methyl]benzamide;

1-[(5-{[(4-chlorobenzoyl)amino]methyl}-2-thienyl)sulfonyl]-4-(hexylamino)proline;

ethyl 2-{[4-(hexylamino)piperidin-1-yl]sulfonyl}-5-{[(3-methoxybenzoyl)amino]methyl}thiophene-3-carboxylate;

N-{[5-{[4-(hexylamino)piperidin-1-yl]sulfonyl}-4-(trimethylsilyl)thien-2-yl]methyl}-3-methoxybenzamide;

 $\label{lem:n-def} $$N-(\{5-\{[4-(hexylamino)piperidin-1-yl]sulfonyl\}-4-[hydroxy(phenyl)methyl]thien-2-yl\}methyl)-3-methoxybenzamide;$

5-[(3-Methoxy-benzoylamino)-methyl]-2-[4-(4-trifluoromethyl-benzylamino)-piperidine-1-sulfonyl]-thiophene-3-carboxylic acid ethyl ester; and

N-[(4-chloro-5-{[4-(hexylamino)piperidin-1-yl]sulfonyl}thien-2-yl)methyl]-3-methoxybenzamide.

Claim 23 (Currently Amended): The method as claimed in claim 11, wherein the sulfonamide derivative of formula (I) is administered to the mammal in combination with at least one

supplementary drug selected from the group consisting of insulin, an aldose reductase inhibitor, an alpha-glucosidase inhibitor, a sulfonyl urea agent, a biguanide, a thiazolidine, a PPARs agonist, and a GSK 3 inhibitor 2- [(4-bromo-2-fluorophenyl)methyl]-6-fluoro- (9CI); Glycine, N-[[6-methoxy-5-(trifluoromethyl)-1-naphtalenyl]thioxomethyl]-N-methyl-(9CI); Spiro[4H-1benzopyran-4,4'-imidazoline]-2',5'-dione, 6-fluoro-2,3-dihydro-, (4S)-(9CI); Methosorbinil; 1-Phtalazineacetic acid, 3,44-dihydro-4-oxo-3-[[5-(trifluoromethyl)-2-benzothiazolyl]methyl]-(9CI); 3-Thiazolidineacetic acid, 5-[(2E)-2-methyl-3-phenyl-2-propenylidene]-4-oxo-2-thioxo-, (5Z)-(9CI); 3-[(4-bromo-2-fluorophenyl)-methyl]-7-chloro-3,4-dihydro-2,4-dioxo-1(2H)quinazoline acetic acid; 2,7-difluorospiro(9H-fluorene-9,4'-imidazolidine)-2',5'-dione; 1-Phtalazineacetic acid, 3-[(4-bromo-2-fluorophenyl)methyl]3,4-dihydro-4-oxo-(9CI); 3-Thiazolidineacetic acid, 5-[(2E)-2-methyl-3-phenyl-2-propenylidene-4-oxo-2-thioxo-, (5Z)-(9CI); {3-[(4,5,7-trifluorobenzothiazol-2-yl)methyl]-5-methylphenylacetic acid}; 5-(3-ethoxy-4pentyloxyphenyl)-2,4-thiazolidinedione; Glycine, N[(7-fluoro-9-oxo-9H-xanthen-2-yl)sulfonyl]-N-methyl-)9CI), Reg.No.124066-40-6)); 2,3-dihydro-2,8-bis(1-methylethyl)-3-thioxox-4H-1,4benzoxazine-4-acetic acid of the chloride salt form (4H-1,4-Benzoxazine-4-acetic acid, 2,3dihydro-2,8-bis(1-methylethyl)-3-thioxo-(9CI); (3',5'-dimethyl-4'-nitromethylsulfonyl-2-(2tolyl)acetanilide); 3,4-dihydro-2,8-diisopropyl-3-thioxo-2H-1,4-benzoxazine-4-acetic acid: 1-f(3bromo-2-benzofuranyl)sulfonyl]-2,4-imidazolidinedione; 1-Imidazolidineacetic acid, 3-[(3nitrophenyl)methyl]-2,4,5-trioxo-9(CI); 1-phtalazineacetic acid, 3,4-dihydro-4-oxo-3-[(5trifluoromethyl)-2-benzothiazolyl]-methyl]; Spiro[4H-1-benzopyran-4,4'-imidazolidine]-2',5'dione; 6-fluoro-2,3-dihydro-2-methyl-, (2R, 4S)-(9CI); 2H-1,4-Benzothiazine-2-acetic acid, 3, 4dihydro-3-oxo-4-[(4,5,7-trifluoro-2-benzothiazolyl)methyl]-(9Cl); Spiro[pyrrolidine-3,6'(5'H)pyrrolo[1,2,3-de][1,4|benzoxazine]-2,5,5'-trione, 8'-chloro-2'-3'-dihydro-(9CI)(also known as

AND 138 or 8-chloro-2',3'-dihydrospiro[pyrolizine-3,6'(5H)-pyrrolo-[1,2,3-de][1,4]benzoxazine]2,5,5'-trione); 6-fluoro-2,3-dihydro-2',5'-dioxo-(2S-cis)-spiro[4H-1-benzopyran-4, 4'-imidazolidine]-2-carboxamide;

miglitol or acarbose, or the pharmaceutically acceptable salt form thereof;

glipizide, Glyburide (Glibenclamide) Clorpropamide, Tolbutamide, Tolazamide and Glimepiride, and pharmaceutically acceptable salt forms thereof

Claim 24 (Currently Amended): The method as elaimed in claim 23 The method as claimed in claim 11, wherein the sulfonamide derivative of formula (I) is administered to the mammal in combination with at least one supplementary drug selected from the group consisting of, wherein said supplementary drug is at least one selected from the group consisting of a rapid acting insulin, an intermediate acting insulin, a long acting insulin, a combination of intermediate and rapid acting insulins, Minalrestat, Tolrestat, Sorbinil, Methosorbinil, Zopolrestat, Epalrestat, Zenarestat, Imirestat, Ponalrestat, ONO-2235, GP-1447, CT-112, BAL-ARI 8, AD-5467, ZD5522, M-16209, NZ-314, M-79175, SPR-210, ADN 138, SNK-860, Miglitol, Acarbose, Glipizide, Glyburide, Chlorpropamide, Tolbutamide, Tolazamide, and Glimepriride.

Claim 25 (Previously Presented): The method as claimed in claim 11, wherein the sulfonamide derivative of formula (I) is administered orally, rectally, transdermally, subcutaneously, intraveneously, intramuscularly, intrathecally, intraperiodontally, and intranasaly.

Claims 26-39 (Cancelled).